



Tactical Field Care Guidelines

14. Splint fractures and recheck pulse





Fractures: Open or Closed

- Open Fracture – associated with an overlying skin wound
- Closed Fracture – no overlying skin wound

Open fracture



Closed fracture





Clues to a Closed Fracture

- Trauma with significant pain AND
- Marked swelling
- Audible or perceived snap
- Different length or shape of limb
- Loss of pulse or sensation distally
- Crepitus (“crunchy” sound)



Splinting Objectives

- Prevent further injury
- Protect blood vessels and nerves
 - Check pulse before and after splinting
- Make casualty more comfortable





Principles of Splinting

- Check for other injuries
- Use rigid or bulky materials
- Try to pad or wrap if using rigid splint
- Secure splint with ace wrap, cravats, belts, duct tape
- Try to splint before moving casualty



Principles of Splinting

- Minimize manipulation of extremity before splinting
- Incorporate joint above and below
- Arm fractures can be splinted to shirt using sleeve
- Consider traction splinting for mid-shaft femur fractures
- Check distal pulse and skin color before and after splinting





Things to Avoid in Splinting

- Manipulating the fracture too much and damaging blood vessels or nerves
- Wrapping the splint too tight and cutting off the circulation to the limb





Commercial Splints





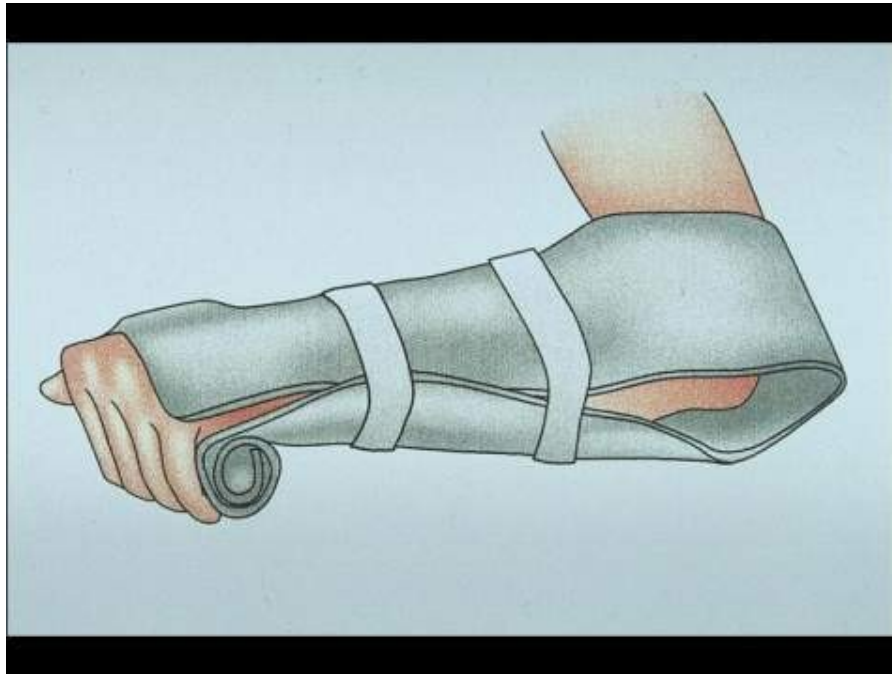
Field-Expedient Splint Materials

- Shirt sleeves/safety pins
- Weapons
- Boards
- Boxes
- Tree limbs
- ThermoRest pad





Don't Forget!



Pulse, motor and sensory checks
before and after splinting!



Splinting Practical





Tactical Field Care Guidelines

15. Antibiotics: recommended for all open combat

wounds:

a. If able to take PO meds:

- Moxifloxacin, 400 mg PO one a day

b. If unable to take PO (shock, unconsciousness):

- Cefotetan, 2 g IV (slow push over 3-5 minutes)

or IM, every 12 hours

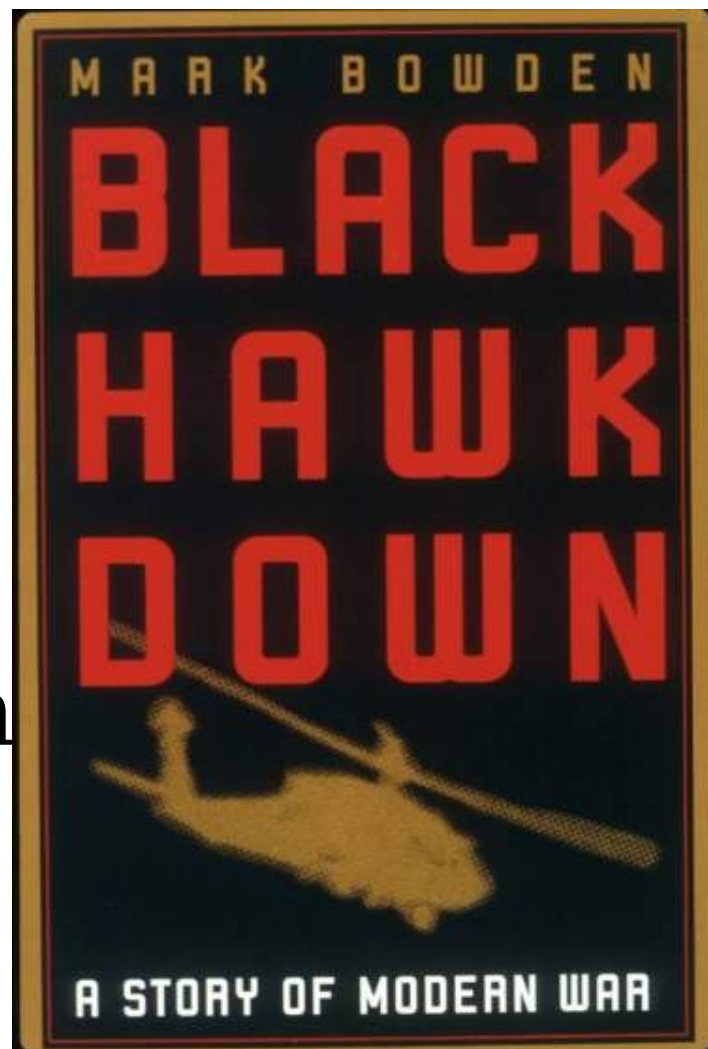
or



Outcomes: Without Battlefield Antibiotics

- Mogadishu 1993
- Casualties: 58
- Wound Infections: 16
- Infection rate: 28%
- Time from wounding to Level II care – 15 h

*Mabry et al
J Trauma 2000*





Outcomes: With Battlefield Antibiotics

Tarpey – AMEDD J 2005:

- 32 casualties with open wounds
- All received battlefield antibiotics
- None developed wound infections
- Used TCCC recommendations modified by availability:
 - Levofloxacin for an oral antibiotic
 - IV cefazolin for extremity injuries
 - IV ceftriaxone for abdominal injuries.



Outcomes: With Battlefield Antibiotics

- MSG Ted Westmoreland
- Special Operations Medical Association presentation 2004
- Multiple casualty scenario involving 19 Ranger and Special Forces WIA as well as 30 Iraqi WIA
- 11-hour delay to hospital care
- Battlefield antibiotics given
- No wound infections developed in this group.



Battlefield Antibiotics



Recommended for all open wounds on the battlefield!




Battlefield Antibiotics

If casualty can take PO meds

- Moxifloxacin 400 mg, one tablet daily
 - Broad spectrum – kills most bacteria
 - Few side effects
 - Take as soon as possible after life-threatening conditions have been addressed
 - Delays in antibiotic administration increase the risk of wound infections



Combat Pill Pack

A photograph of the Combat Pill Pack packaging, which is a yellowish, crinkled plastic bag. A white label is affixed to the front, containing instructions for use in the event of an open combat wound.

In the event of open combat wound
swallow all four pills with water.

Mobic 15mg
Tylenol ER 650mg, 2 caplets
Moxifloxacin 400mg



Pain Management and Infection Control
For Combat Casualties

"Just Got Easier To Swallow"



Battlefield Antibiotics

- Casualties who cannot take PO meds:
 - Ertapenem 1 gm IV/IM once a day
 - IM should be diluted with lidocaine (1 gm vial ertapenem with 3.2cc lidocaine without epinephrine)
 - IV requires a 30-minute infusion time
- NOTE: Cefotetan is also a good alternative, but has been more difficult to obtain through supply channel





Medication

Allergies

- **Screen your units for drug allergies!**
- Patients with allergies to aspirin or other non-steroidal anti-inflammatory drugs should not use Mobic.
- Allergic reactions to Tylenol are uncommon.
- Patients with allergies to flouroquinolones, penicillins, or cephalosporins may need alternate antibiotics which should be selected by unit medical



Tactical Field Care Guidelines

16. Burns

- a. Facial burns, especially those that occur in closed spaces, may be associated with inhalation injury. Aggressively monitor airway status and oxygen saturation in such patients and consider early surgical airway for respiratory distress or oxygen desaturation.
- b. Estimate total body surface area (TBSA) burned to the nearest 10% using the Rule of Nines. (see third slide)





Degrees of Burns

Superficial burn
“First Degree”



Partial thickness burn
“Second degree”





Degrees of Burns

Full-thickness burn
“Third degree”

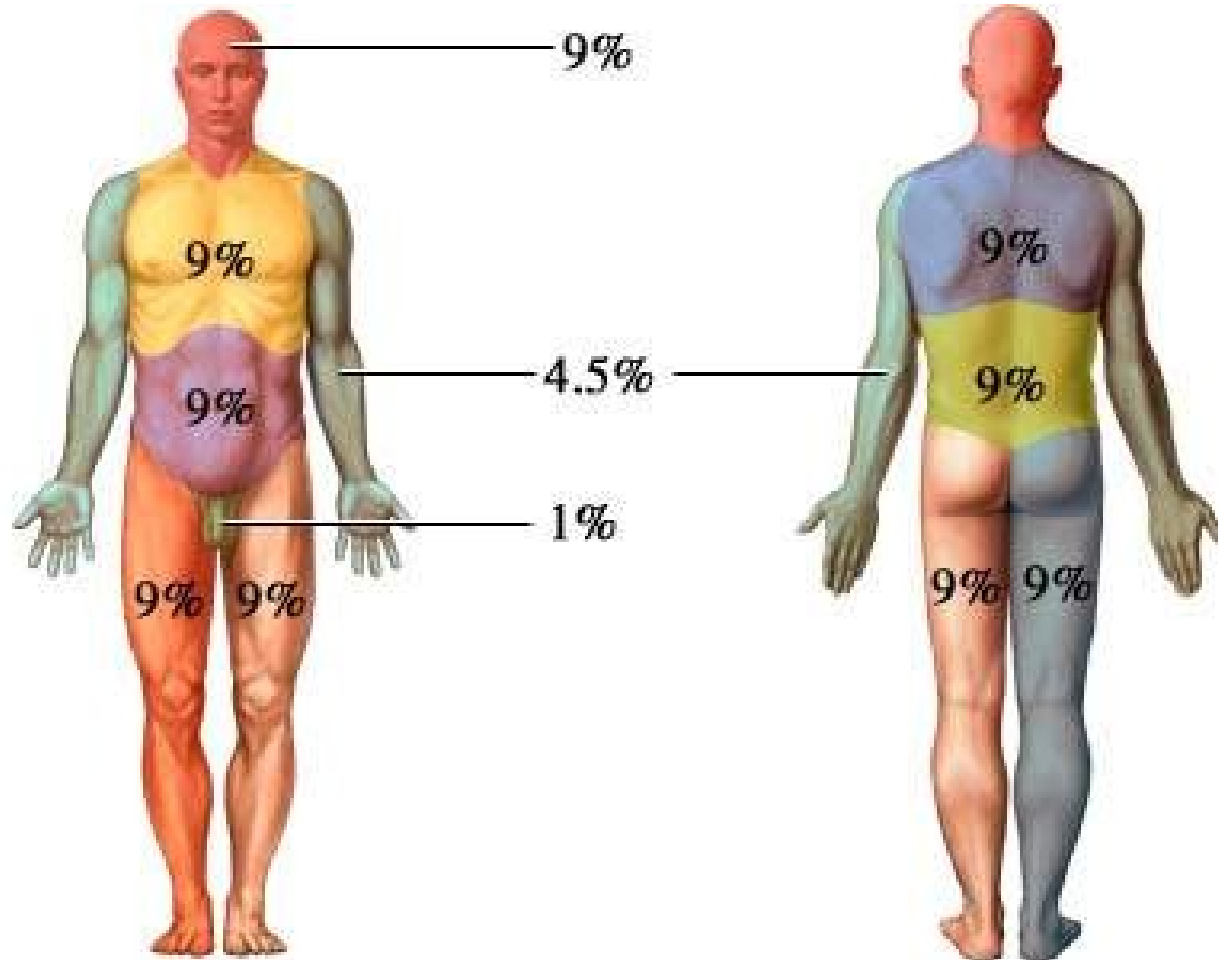


Deep(subdermal) burn
“Fourth-degree”





Rule of Nines for Calculating Burn Area



Do not count superficial (first degree) burns in calculating TBSA burned.



Tactical Field Care Guidelines

16. Burns (cont)

- c. Cover the burn area with dry, sterile dressings. For extensive burns ($>20\%$), consider placing the casualty in the HRS or the Blizzard Survival Blanket in the Hypothermia Prevention Kit in order to both cover the burned areas and prevent hypothermia.





Tactical Field Care Guidelines

16. Burns (cont)

d. Fluid resuscitation (USAISR Rule of Ten)

- If **burns are greater than 20%** of Total Body Surface Area, fluid resuscitation should be initiated as soon as IV/IO access is established. **Resuscitation should be initiated with Lactated Ringer's, normal saline, or Hextend. If Hextend is used, no more than 1000 ml should be given,** followed by Lactated Ringer's or normal saline as needed.



Tactical Field Care Guidelines

16. Burns (cont)

- **Initial IV/IO fluid rate is calculated as %TBSA x 10cc/hr for adults weighing 40-80 kg.**
- For every 10 kg ABOVE 80 kg, increase initial rate by 100 ml/hr.
- If hemorrhagic shock is also present, resuscitation for hemorrhagic shock takes precedence over resuscitation for burn shock. Administer IV/IO fluids per the TCCC Guidelines in Section 7.



Tactical Field Care Guidelines

16. Burns (cont)

- e. Analgesia in accordance with TCCC Guidelines in Section 13 may be administered to treat burn pain.
- f. Prehospital antibiotic therapy is not indicated solely for burns, but antibiotics should be given per TCCC guidelines in Section 15 if indicated to prevent infection in penetrating wounds.



Tactical Field Care Guidelines

16. Burns (cont)

- g. All TCCC interventions can be performed on or through burned skin in a burn casualty.

These casualties are “Trauma casualties with burns” - not the other around

US Army ISR Burn Center





Tactical Field Care Guidelines

17. Communicate with the casualty if possible.

- Encourage; reassure
- Explain care





Tactical Field Care Guidelines

18. Cardiopulmonary resuscitation (CPR)

Resuscitation on the battlefield for victims of blast or penetrating trauma who have no pulse, no ventilations, and no other signs of life will not be successful and should not be attempted. However, casualties with torso trauma or polytrauma who have no pulse or respirations during TFC should have bilateral needle decompression performed to ensure they do not have a tension



CPR



NO battlefield CPR



CPR in Civilian Trauma

- 138 trauma patients with prehospital cardiac arrest and in whom resuscitation was attempted.
- No survivors
- Authors recommended that trauma patients in cardiopulmonary arrest not be transported emergently to a trauma center even in a civilian setting due to large economic cost of treatment without a significant chance for survival.

Rosemurgy et al. J Trauma 1993



The Cost of Attempting CPR on the Battlefield

- CPR performers may get killed
- Mission gets delayed
- Casualty stays dead



CPR on the Battlefield (Ranger Airfield Operation in Grenada)

- Airfield seizure operation
- Ranger shot in the head by sniper
- No pulse or respirations
- CPR attempts unsuccessful
- Operation delayed while CPR performed
- Ranger PA finally intervened:
“Stop CPR and move out!”



CPR in Tactical Settings

Only in the case of cardiac arrests from:

- Hypothermia
- Near-drowning
- Electrocution
- Other non-traumatic causes

should CPR be considered prior to the

Tactical Evacuation Care phase.



Traumatic Cardiac Arrest in TCCC

- Mounted IED attack in March 2011
- Casualty unconscious from closed head trauma
- Lost vital signs prehospital
- CPR on arrival at hospital
- **Bilateral needle decompression** done in ER
- Rush of air from left-sided tension pneumothorax
- Return of vital signs – life saved
- This procedure is routinely done by Emergency Medicine physicians and Trauma Surgeons for trauma victims who lose their pulse and heart rate in the hospital Emergency Department.



Questions?





Tactical Field Care Guidelines

19. Documentation of Care:

Document clinical assessments, treatments rendered, and changes in the casualty's status on a TCCC Casualty Card (DD Form 1380). Forward this information with the casualty to the next level of care.



TCCC Casualty Card

- Designed by combat medics
- Used in combat since 2002
- Replaced old DD Form 1380
- Only essential information
- Can be used by hospital to document injuries sustained and field treatments rendered
- Heavy-duty waterproof or laminated paper



Kotwal et al - 2011

ORIGINAL ARTICLE

ONLINE FIRST

Eliminating Preventable Death on the Battlefield

Russ S. Kotwal, MD, MPH; Harold R. Montgomery, NREMT; Bari M. Kotwal, MS; Howard R. Champion, FRCS; Frank K. Butler Jr, MD; Robert L. Mabry, MD; Jeffrey S. Cain, MD; Lorne H. Blackbourne, MD; Kathy K. Mechler, MS, RN; John B. Holcomb, MD

- In order to know if we are doing the right thing, we must first know what we did
- This paper was enabled by the Ranger TCCC Card



TCCC Casualty Card

- This card is based on the principles of TCCC.
- It addresses the initial lifesaving care provided at the point of wounding.
- Filled out by *whoever* is caring for the casualty.
- Its format is simple with a circle or “X” in the appropriate block.



TCCC Casualty Card

Front

TACTICAL COMBAT CASUALTY CARE (TCCC) CARD				
BATTLE ROSTER #: _____				
EVAC: <input type="checkbox"/> Urgent <input type="checkbox"/> Priority <input type="checkbox"/> Routine				
NAME (Last, First): _____			LAST 4: _____	
GENDER: <input type="checkbox"/> M <input type="checkbox"/> F DATE (DD-MMM-YY): _____			TIME: _____	
SERVICE: _____		UNIT: _____		ALLERGIES: _____
Mechanism of Injury: (X all that apply) <input type="checkbox"/> Artillery <input type="checkbox"/> Blunt <input type="checkbox"/> Burn <input type="checkbox"/> Fall <input type="checkbox"/> Grenade <input type="checkbox"/> GSW <input type="checkbox"/> IED <input type="checkbox"/> Landmine <input type="checkbox"/> MVC <input type="checkbox"/> RPG <input type="checkbox"/> Other: _____				
Injury: (Mark injuries with an X) <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px;"> TQ: R Arm TYPE: _____ TIME: _____ </div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px;"> TQ: L Arm TYPE: _____ TIME: _____ </div> </div> </div> <div style="text-align: center; margin: 20px 0;"> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px;"> TQ: R Leg TYPE: _____ TIME: _____ </div> </div> <div style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: 100px;"> TQ: L Leg TYPE: _____ TIME: _____ </div> </div> </div>				
Signs & Symptoms: (Fill in the blank)				
<i>Time</i>				
<i>Pulse (Rate & Location)</i>				
<i>Blood Pressure</i>	/	/	/	/
<i>Respiratory Rate</i>				
<i>Pulse Ox % O2 Sat</i>				
<i>AVPU</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Pain Scale (0-10)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



TCCC Casualty Card

Back

BATTLE ROSTER #: _____

EVAC: ☐ Urgent ☐ Priority ☐ Routine

Treatments: (X all that apply, and fill in the blank) **Type**

C: TQ- ☐ Extremity ☐ Junctional ☐ Truncal

Dressing- ☐ Hemostatic ☐ Pressure ☐ Other

A: ☐ Intact ☐ NPA ☐ CRIC ☐ ET-Tube ☐ SGA

B: ☐ O2 ☐ Needle-D ☐ Chest-Tube ☐ Chest-Seal

C:	Name	Volume	Route	Time
Fluid			<input type="checkbox"/>	
			<input type="checkbox"/>	
Blood Product			<input type="checkbox"/>	
			<input type="checkbox"/>	

MEDS:	Name	Dose	Route	Time
Analgesic (e.g., Ketamine, Fentanyl, Morphine)			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
Antibiotic (e.g., Moxifloxacin, Ertapenem)			<input type="checkbox"/>	
			<input type="checkbox"/>	
Other (e.g., TXA)			<input type="checkbox"/>	
			<input type="checkbox"/>	

OTHER: ☐ Combat-Pill-Pack ☐ Eye-Shield (☐ R ☐ L) ☐ Splint
☐ Hypothermia-Prevention Type: _____

NOTES:

FIRST RESPONDER

NAME (Last, First): _____ LAST 4: _____



Instructions

- A TCCC Casualty Card should be kept in each Individual First Aid Kit.
- Use an indelible marker to fill it out.
- When used, attach it to the casualty's belt loop, or place it in their upper left sleeve, or the left trouser cargo pocket.
- Include as much information as you can.



Documentation

- Record each specific intervention in each category.
- If you are not sure what to do, the card will prompt you where to go next.
- Simply circle the intervention you performed.
- Explain any action you want clarified in the remarks area.



Documentation

- **The card does not imply that every casualty needs all of these interventions.**
- You may not be able to perform all of the interventions that the casualty needs.
- The next person caring for the casualty can add to the interventions performed.
- This card can be filled out in less than two minutes



TCCC Card Abbreviations

- DTG = Date-Time Group (e.g. - 160010Oct2009)
- NBC = Nuclear, Biological, Chemical
- TQ = Tourniquet
- GSW = Gunshot Wound
- MVA = Motor Vehicle Accident
- AVPU = Alert, Verbal stimulus, Painful stimulus, Unresponsive
- Cric = Cricothyroidotomy
- NeedleD = Needle decompression
- IV = Intravenous
- IO = Intraosseous
- NS = Normal Saline
- LR = Lactated Ringers
- ABX = Antibiotics



TCCC After Action Report

- This electronic AAR is intended to be completed when the first responder returns to base.
- Somewhat more complete than the TCCC Casualty Card
- TCCC AAR should be submitted to the Joint Theater Trauma System Director within 72 hours of casualty evacuation
- **Both the TCCC Casualty Card and the TCCC AAR are required by USFOR-A FRAGO 13-139**



TCCC After- Action Report

March
2014

MEDICAL RECORD-SUPPLEMENTAL MEDICAL DATA														
For use of this form, see AR 40-66; the proponent agency is the Office of the Surgeon General														
REPORT TITLE TACTICAL COMBAT CASUALTY CARE-AFTER ACTION REPORT										JTS APPROVED (Date) (20140318) -VLO				
Event: Date		Time		Country		AOR/Region								
Phase <input type="checkbox"/> Care Under Fire <input type="checkbox"/> Tactical Field Care <input type="checkbox"/> Aid Station Care <input type="checkbox"/> Battle Injury <input type="checkbox"/> WIA <input type="checkbox"/> KIA <input type="checkbox"/> Non Battle Injury <input type="checkbox"/> Alive <input type="checkbox"/> Dead														
Mechanism						Injuries			Annotate Injuries					
<input type="checkbox"/> Aircraft Crash <input type="checkbox"/> Blast - IED or Mine Dismounted <input type="checkbox"/> Blast - IED or Mine Mounted <input type="checkbox"/> Blast - Indirect Fire (Mortar/Artillery) <input type="checkbox"/> Blast - RPG or Grenade <input type="checkbox"/> Blast - Other <input type="checkbox"/> Blunt <input type="checkbox"/> Burn <input type="checkbox"/> Collapse/Crush from Structure <input type="checkbox"/> Drowning <input type="checkbox"/> Environmental <input type="checkbox"/> Fall, Height _____ ft <input type="checkbox"/> Fragmentation (Shrapnel) <input type="checkbox"/> Gun Shot Wound <input type="checkbox"/> Motor Vehicle Crash <input type="checkbox"/> Parachute Incident <input type="checkbox"/> Other _____						<input type="checkbox"/> Amputation (AMP) <input type="checkbox"/> Burn (B), TBSA _____ % <input type="checkbox"/> Cranius (C) <input type="checkbox"/> Deformity (D) <input type="checkbox"/> Degloving (DG) <input type="checkbox"/> Fracture (FX) <input type="checkbox"/> Gunshot Wound (GSW) <input type="checkbox"/> Hematoma (H) <input type="checkbox"/> Laceration (LAC) <input type="checkbox"/> Peppering (PP) <input type="checkbox"/> Puncture Wound (PW) <input type="checkbox"/> TBI Suspect (TBI) <input type="checkbox"/> Other _____								
Vital Signs														
Time	HR	BP	RR	SpO2	ETCO2	Temp	F	C	AVPU	GCS: Eye 1-4	Verbal 1-5	Motor 1-5	Total	Pain 0-10
First	_____	_____	_____	_____	_____	_____	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
Last	_____	_____	_____	_____	_____	_____	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
Circulation - Hemorrhage Control														
Time	NM: Non-medical; M: Medical; MO: Medical Officer													
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-CAT	<input type="checkbox"/> TQ-SOFTT	<input type="checkbox"/> TQ-Other				<input type="checkbox"/> RUE	<input type="checkbox"/> LUE	<input type="checkbox"/> RLE	<input type="checkbox"/> LLE	
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-CAT	<input type="checkbox"/> TQ-SOFTT	<input type="checkbox"/> TQ-Other				<input type="checkbox"/> RUE	<input type="checkbox"/> LUE	<input type="checkbox"/> RLE	<input type="checkbox"/> LLE	
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-CAT	<input type="checkbox"/> TQ-SOFTT	<input type="checkbox"/> TQ-Other				<input type="checkbox"/> RUE	<input type="checkbox"/> LUE	<input type="checkbox"/> RLE	<input type="checkbox"/> LLE	
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-CAT	<input type="checkbox"/> TQ-SOFTT	<input type="checkbox"/> TQ-Other				<input type="checkbox"/> RUE	<input type="checkbox"/> LUE	<input type="checkbox"/> RLE	<input type="checkbox"/> LLE	
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-Multiple to the same extremity, Type & Ext										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> TQ-Junctional, Type & Region										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> Hemostatic Dressing, Type										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> Pressure Dressing, Type										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> Other Dressing, Type										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> Splint, Type										
Airway														
Time	NM: Non-medical; M: Medical; MO: Medical Officer													
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> NPA-Nasopharyngeal Airway										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> Cric-Cricothyroidotomy, Type										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> ET-Endotracheal Tube, Type										
_____	<input type="checkbox"/> NM	<input type="checkbox"/> M	<input type="checkbox"/> MO	<input type="checkbox"/> King LT	<input type="checkbox"/> LMA	<input type="checkbox"/> Other								
PREPARED BY (Name, Rank & Title)										DEPARTMENT/SERVICE/CLINIC (Treating Unit)		DATE		
PATIENT'S IDENTIFICATION (Name: last, first, middle; grade; date; hospital or medical facility)										<input type="checkbox"/> HISTORY/PHYSICAL		<input checked="" type="checkbox"/> TREATMENT		
Last Name _____ First Name _____ MI _____										<input type="checkbox"/> DIAGNOSTIC STUDIES		<input type="checkbox"/> FLOW CHART		
BR# _____ Rank _____ Unit _____										<input type="checkbox"/> O'S-428 EXAMINATION OR EVALUATION				
SSN _____ DOB _____ Gender <input type="checkbox"/> M <input type="checkbox"/> F Allergy _____ <input type="checkbox"/> Other _____										<input type="checkbox"/> O'S-428, Specify				

Questions ?





Further Elements of Tactical Field Care

- Reassess regularly.
- Prepare for transport.
- Minimize removal of uniform and protective gear, but get the job done.
- Replace body armor after care, or at least keep it with the casualty. He or she may need it again if there is additional contact.



Further Elements of Tactical Field Care

Casualty movement in TFC may be better accomplished using litters





Litter Carry Video

- Secure the casualty on the litter
- Bring his weapon





Summary of Key Points

- Still in hazardous environment
- Limited medical resources
- Hemorrhage control
- Airway management
- Breathing
- Transition from tourniquet to another form of hemorrhage control when appropriate
- Hypotensive resuscitation with Hextend for hemorrhagic shock
- Hypothermia prevention



Summary of Key Points

- Shield and antibiotics for penetrating eye injuries
- Pain control
- Antibiotics
- Reassure casualties
- No CPR
- Documentation of care



Questions?



Wear your body armor!



Casualty Collection Point Operations

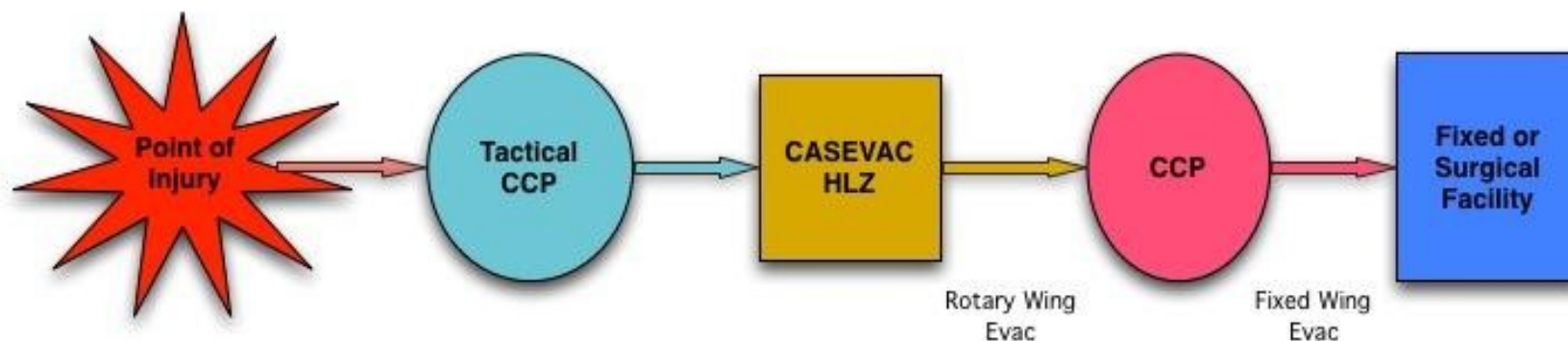


This section is adapted from:

Kotwal, R., Montgomery, H. (2011). TCCC Casualty Response Planning. In N. McSwain, J. Salamone, P. Pons, B. Butler & S. Giebner (Eds.), PHTLS Prehospital Trauma Life Support: Military Version, Seventh Edition (pp. 719-735). St. Louis: Elsevier.



Casualty Collection Points in the Evacuation Chain



Casualty flow from target to hospitalization.



CCP Site Selection

- Should be reasonably close to the fight
- Located near areas where casualties are likely to occur
- Must provide cover and concealment from the enemy
- Inside a building or on hardstand (an exclusive CCP building limits confusion)
- Should have access to evacuation routes (foot, vehicle, aircraft)
- Proximal to “Lines of Drift” or paths across terrain that are the most likely to be used when going from one place to another.

(continued)



CCP Site Selection

- Adjacent to Tactical Choke Points (breeches, HLZ's, etc...)
- Avoid natural or enemy choke points
- Choose an area providing passive security (inside the perimeter)
- Good drainage
- Accessible to evacuation assets
- Expandable if casualty load increases



CCP Operational Guidelines

- Typically, a First Sergeant (1SG) or Platoon Sergeant (PSG), or equivalent, is given responsibility for casualty flow and everything outside the CCP:
 - Provides for CCP structure and organization (color coded with chemlights)
 - Maintains command & control and battlefield situational awareness
 - Controls aid & litter teams, and provides security

(continued)



CCP Operational Guidelines

- First Sergeant (1SG), Platoon Sergeant (PSG) or equivalent:
 - Strips, bags, tags, organizes, and maintains casualties' tactical gear outside of treatment area
 - Accountable for tracking casualties and equipment into and out of CCP and reports to higher command
 - Moves casualties through CCP entrance/exit choke point which should be marked with an IR chemlight



CCP Operational Guidelines

- Medical personnel are responsible for everything inside the CCP
 - Triage officer sorts and organizes casualties at choke point into appropriate treatment categories
 - Medical officers and medics organize medical equipment and supplies and treat casualties
 - EMTs, First Responders, and Aid & Litter Teams assist with treatment



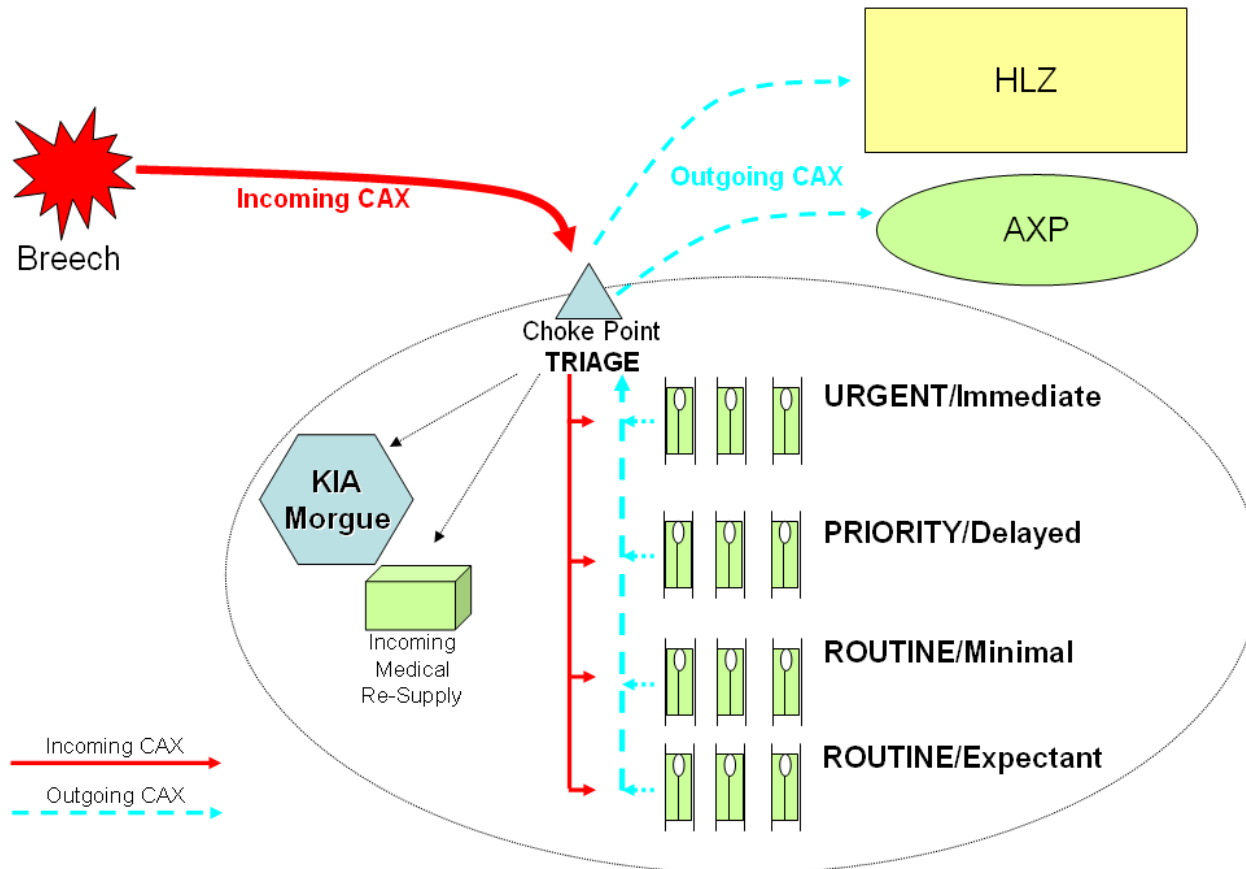
CCP Operational Guidelines

- Casualties with minor injuries should remain with original element or assist with CCP security if possible
- Those killed in action should remain with original element



CCP Operational Guidelines

CCP / CEP Template 1 (Adjacent to Breach)



Questions?





Management of Wounded Hostile Combatants





Objective

- DESCRIBE the considerations in rendering trauma care to wounded hostile combatants.



Care for Wounded Hostile Combatants

- No medical care during Care Under Fire
- Though wounded, enemy personnel may still act as hostile combatants
 - May employ any weapons or detonate any ordnance they are carrying
- **Enemy casualties are hostile combatants until they:**
 - **Indicate surrender**
 - **Drop all weapons**
 - **Are proven to no longer pose a threat**



Care for Wounded Hostile Combatants

- **Combat medical personnel should not attempt to provide medical care until sure that wounded hostile combatant has been rendered safe by other members of the unit.**
- Restrain with flex cuffs or other devices if not already done.
- Search for weapons and/or ordnance.
- Silence to prevent communication



Care for Wounded Hostile Combatants

- Segregate from other captured hostile combatants.
- Safeguard from further injury.
- **Care as per TFC guidelines for U.S. forces after above steps are accomplished.**
- Speed to the rear as medic and tactically feasible



QUESTIONS ?





Preparing for Evacuation





NATO/ISAF Standard Evacuation Categories

International Security Assistance Force

SOP #312:

- Governs operations in Afghanistan
- Follows NATO doctrine
- Specifies three categories for casualty evacuation:
 - **A - Urgent**
 - **B - Priority**
 - **C - Routine**



NATO/ISAF Standard Evacuation Categories

- **CAT A - Urgent (denotes a critical, life-threatening injury)**
 - Significant injuries from a dismounted IED attack
 - Gunshot wound or penetrating shrapnel to chest, abdomen or pelvis
 - Any casualty with ongoing airway difficulty
 - Any casualty with ongoing respiratory difficulty



NATO/ISAF Standard Evacuation Categories

- **CAT A - Urgent** (continued)
 - Casualty with known or suspected spinal injury
 - Casualty in shock
 - Casualty with bleeding that is difficult to control
 - Moderate/Severe TBI
 - Burns greater than 20% Total Body Surface Area



NATO/ISAF Standard Evacuation Categories

- **CAT B - Priority (serious injury)**
 - Isolated, open extremity fracture with bleeding controlled
 - Any casualty with a tourniquet in place
 - Penetrating or other serious eye injury
 - Significant soft tissue injury without major bleeding
 - Extremity injury with absent distal pulses
 - Burns 10-20% Total Body Surface Area



NATO/ISAF Standard Evacuation Categories

- **CAT C - Routine (mild to moderate injury)**
 - Concussion (mild TBI)
 - Gunshot wound to extremity - bleeding controlled without tourniquet
 - Minor soft tissue shrapnel injury
 - Closed fracture with intact distal pulses
 - Burns < 10% Total Body Surface Area

Tactical Evacuation: Nine Rules of Thumb





TACEVAC 9 Rules of Thumb: Assumptions

- These Rules of Thumb are designed to help the corpsman or medic determine the true urgency for evacuation.
- They assume that the decision is being made at 15-30 minutes after wounding.
- Also that care is being rendered per the TCCC guidelines.
- Most important when there are tactical constraints on evacuation:
 - Interferes with mission
 - High risk for team
 - High risk for TACEVAC platform



TACEVAC Rule of Thumb #1

Soft tissue injuries are common and may look bad, but usually don't kill unless associated with shock





TACEVAC Rule of Thumb #2

Bleeding from most extremity wounds should be controllable with a tourniquet or hemostatic dressing. Evacuation delays should not increase mortality if bleeding is controlled.





TACEVAC Rule of Thumb #3

**Casualties who are in shock
should be evacuated as soon
as possible**



Gunshot wound to the abdomen



TACEVAC Rule of Thumb #4

Casualties with penetrating wounds of the chest who have respiratory distress unrelieved by needle decompression should be evacuated as possible.





TACEVAC Rule of Thumb #5

Casualties with blunt or penetrating trauma of the face associated with airway difficulty should have an immediate airway established and be evacuated as soon as possible.

REMEMBER to let the casualty sit up and lean forward if that helps him





TACEVAC Rule of Thumb #6

Casualties with blunt or penetrating wounds of the head where there is obvious massive brain damage and unconsciousness are unlikely to survive with or without emergent evacuation.



TACEVAC Rule of Thumb #7

Casualties with blunt or penetrating wounds to the head - where the skull has been penetrated but the casualty is conscious - should be evacuated emergently.





TACEVAC Rule of Thumb #8

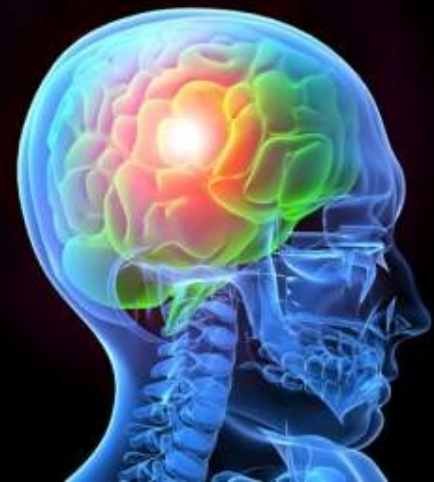
Casualties with penetrating wounds of the chest or abdomen who are not in shock at their 15-minute evaluation have a moderate risk of developing late shock from slowly bleeding internal injuries. They should be carefully monitored and evacuated as





TACEVAC Rule of Thumb #9

Casualties with TBI who display “red flag” signs - witnessed loss of consciousness, altered mental status, unequal pupils, seizures, repeated vomiting, visual disturbance, worsening headache, unilateral weakness, disorientation, or abnormal speech - require urgent evacuation to a medical treatment facility.





9-Line Evacuation Request



quired if you want an evacuation from another t



9-Line Evacuation Request

- Request for resources through tactical aircraft channels.
- NOT a direct medical communication with medical providers
- Significance
 - Determines tactical resource allocation
 - DOES NOT convey much useful medical information



9-Line Evacuation Request

Line 1: Pickup location

Line 2: Radio frequency, call sign and suffix

Line 3: Number of casualties by precedence (evacuation category)

Line 4: Special equipment required



9-Line Evacuation Request

Line 5: Number of casualties by type (litter, ambulatory)

Line 6: Security at pickup site

Line 7: Method of marking pickup site



9-Line Evacuation Request

Line 8: Casualty's nationality and status

Line 9: Terrain Description; NBC
contamination
if applicable

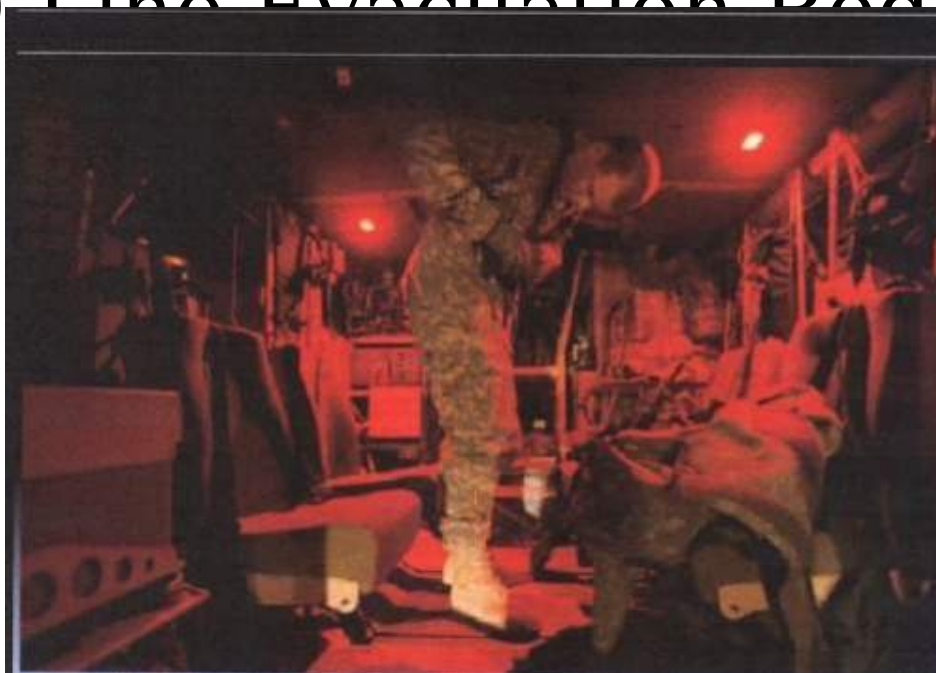




Preparing for Evacuation

Summary of Key Points

- Evacuation Categories
- Tactical Evacuation Rules of Thumb
- 9 Line Evacuation Request



Questions?





Convoy IED Scenario

- Recap from Care Under Fire
- Your last medical decision during Care Under Fire:
 - Placed tourniquet on left stump
- You moved the casualty behind cover and returned fire.
- You provided an update to your mission commander



Convoy IED Scenario

Assumptions in discussing TFC in this scenario:

- Effective hostile fire has been suppressed.
- Team Leader has directed that the unit will move.
- Pre-designated HLZ for helicopter evacuation is 15 minutes away.
- Flying time to hospital is 30 minutes.
- Ground evacuation time is 3 hours.
- Enemy threat to helicopter at HLZ estimated to be minimal.



Convoy IED Scenario

Next decision (Command Element)?

- How to evacuate casualty?
 - Helicopter
 - Longer time delay for ground evacuation
 - Enemy threat at HLZ acceptable



Convoy IED Scenario

Next decision (Command Element)?

- Load first and treat enroute to HLZ or treat first and load after?
 - Load and Go
 - Why?
 - Can continue treatment enroute
 - Avoid potential second attack at ambush site



Convoy IED Scenario

Casualty is still conscious and has no neck or back pain.

Next decision?

- Do you need spinal immobilization?
- No
 - Not needed unless casualty has neck or back pain
 - Why?
 - Low expectation of spinal fracture in the absence of neck or back pain in a conscious casualty
 - Speed is critical
 - NOTE: Casualties who are unconscious from primary blast trauma should have spinal immobilization if feasible.



Convoy IED Scenario

Ten minutes later, you and the casualty are in a vehicle enroute to HLZ.

Next action?

- Reassess casualty
 - Casualty is now unconscious
 - No bleeding from first tourniquet site
 - Other stump noted to have severe bleeding



Convoy IED Scenario

- Next action?
 - Place tourniquet on 2nd stump
- Next action?
 - Remove any weapons or ordnance that the casualty may be carrying.
- Next action?
 - Place nasopharyngeal airway
- Next action?
 - Make sure he's not bleeding heavily elsewhere



Convoy IED Scenario

- Next action?
 - Establish IV access - need to resuscitate for shock
- Next action?
 - Administer 1 gram of tranexamic acid (TXA) in 100 cc NS or LR
 - Infuse slowly over 10 minutes



Convoy IED Scenario

- Next action?
 - Begin fluid resuscitation with 500 ml bolus of Hextend
- Next actions?
 - Hypothermia prevention
 - IV antibiotics
 - Pulse ox monitoring
 - Continue to reassess casualty



Convoy IED Scenario

What is your 9-line?

Line 1: Grid NS 12345678

Line 2: 38.90, Convoy 6

Line 3: 1 Urgent

Line 4: PRBCs, oxygen, advanced
airway

Line 5: 1 litter

Line 6: Secure

Line 7: VS-17 (Orange Panel)

Line 8: U.S. Military

Line 9: Flat field

*** Some individuals recommend adding a
tenth line: the casualty's vital signs**



Convoy IED Scenario

**Your convoy has now arrived at the
HLZ**

Next steps?

- Continue to reassess casualty and prep for helo transfer
 - Search casualty for any remaining weapons before boarding helo
 - Secure casualty's personal effects
 - Document casualty status and treatment



Remember

- **The TCCC guidelines are not a rigid protocol.**
- **The tactical environment may require some modifications to the guidelines.**
- **Think on your feet!**





Questions?





Back-Up Slides



FAST1[®] Removal

- Remove Protector Dome
- Disconnect Infusion Tube
- Pull Infusion Tube perpendicular to the manubrium in one continuous motion. Pull the tube, not the Luer lock. **It is normal for the tube to stretch.**
- Remove Target Patch
- Apply pressure over wound, then dress site.



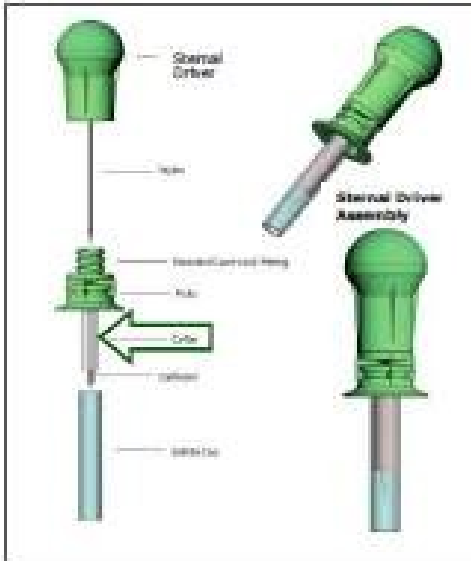


with the **Sternal EZ-IO[®] Needle Set**

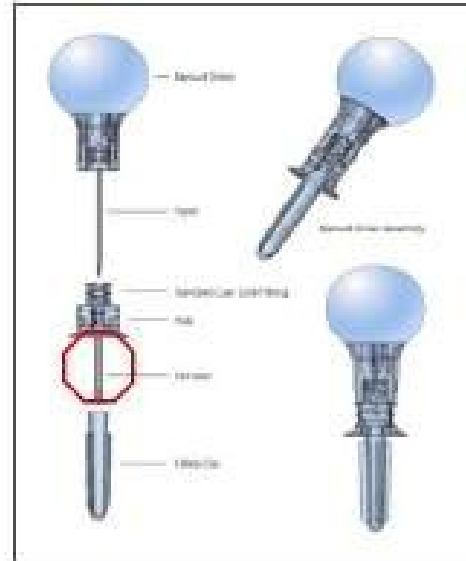




Sternal EZ-IO[®]



Sternal
Needle/Dri



Limb
Needle/Dri

GREEN^{ver} = Sternal^{ver} Access



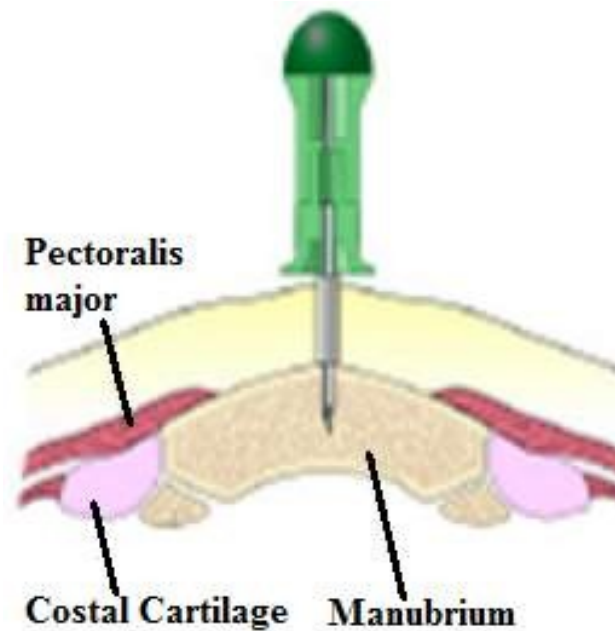
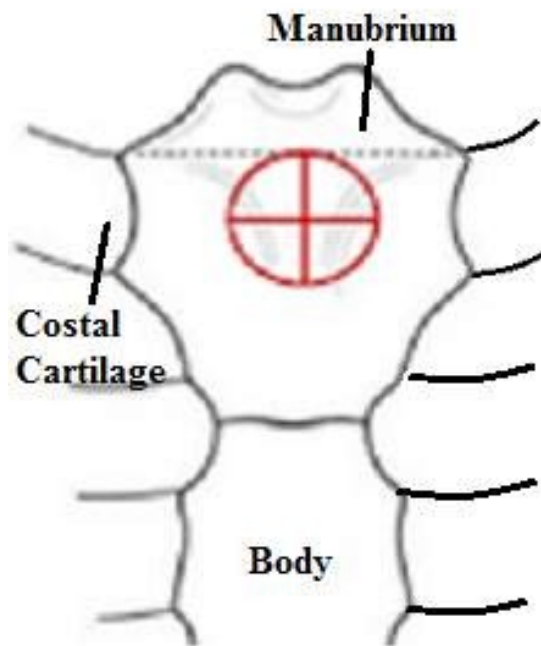
Sternal EZ- IO®

Contraindications:

- Fracture of the manubrium
- Previous surgical procedure
- Manubrial IO within the past 24 – 48 hours
- Infection at the insertion site
- Inability to locate landmarks or excessive tissue over the target site

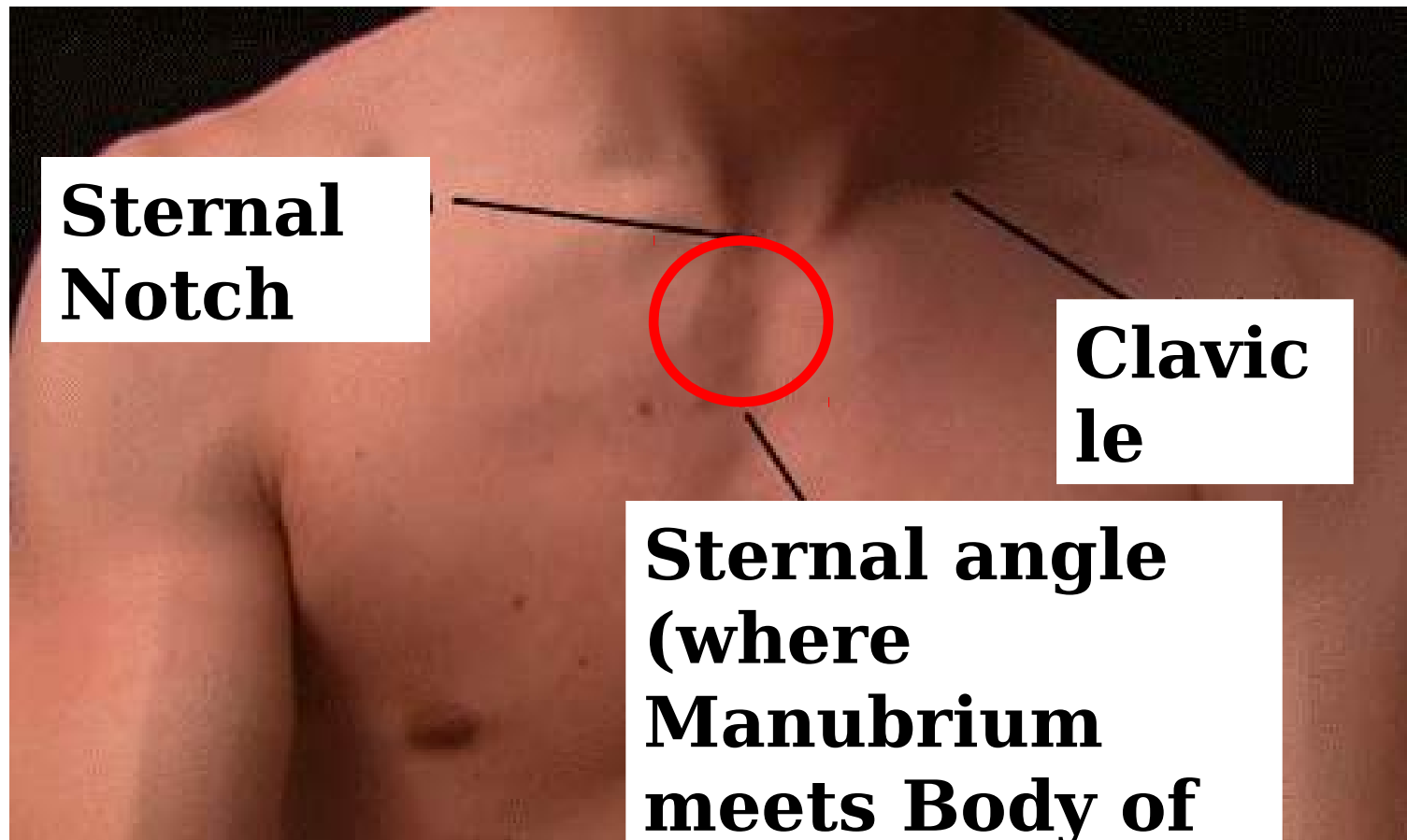


Sternal EZ-IO[®]





Sternal EZ- IO[®]





Sternal EZ-IO[®]

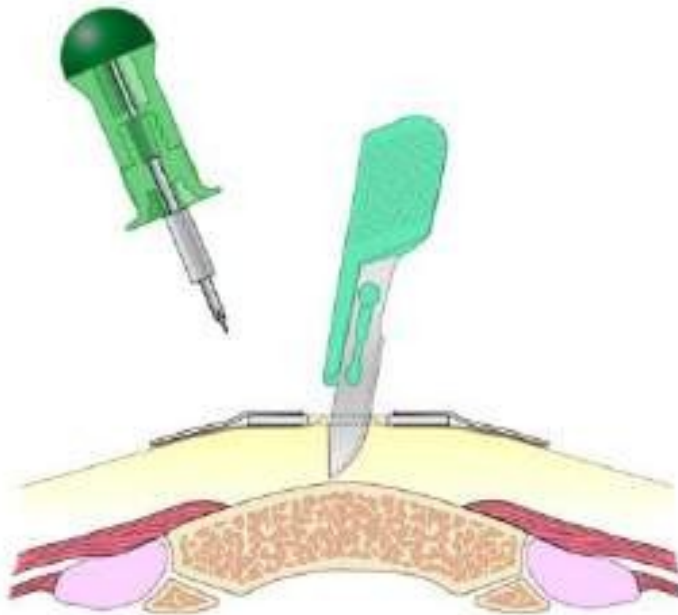
Sternal Locator





Sternal EZ-IO[®]

Make an incision over the insertion site.



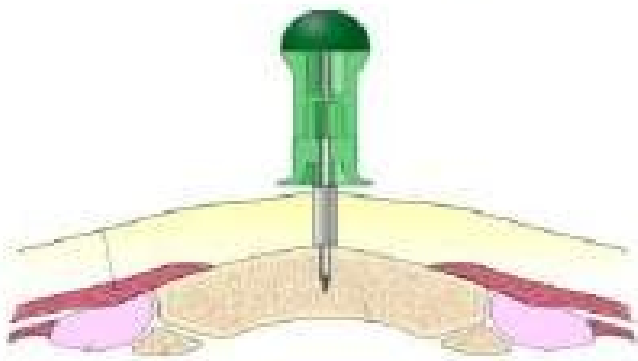
**Use the lancet provided in the needle set.
Insert it all the way down to the bone.**



Sternal EZ-IO®

Insert sternal needle.

Insert needle through incision.



Twist gently clockwise and counterclockwise.



Sternal EZ- IO[®]

Remove the Stylet



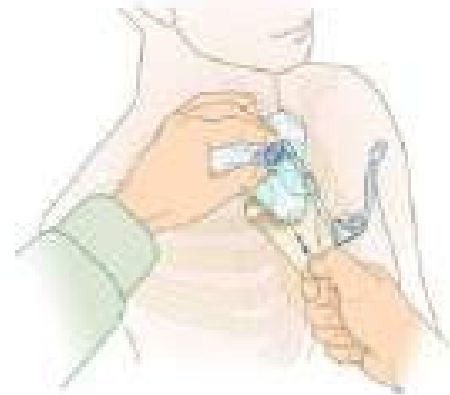
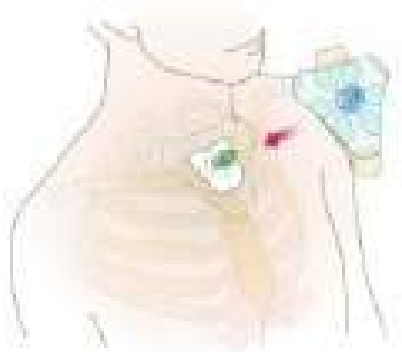
Manually stabilize the hub.

**Rotate the stylet
counterclockwise, then pull it
out.**



Sternal EZ-IO[®]

Apply the Stabilizer

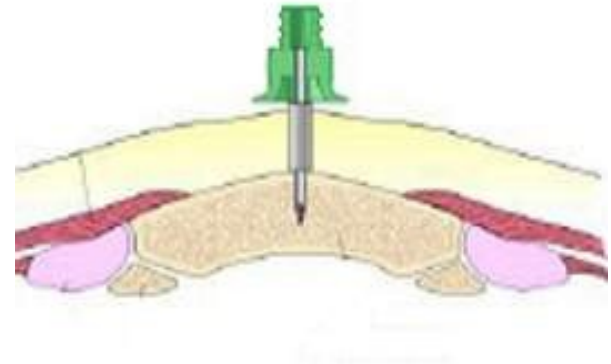




Sternal EZ-IO®

Confirm Catheter Placement

- **Firmly seated catheter**
- **Flash of blood or blood on aspiration***
- **Pressurized fluids flow freely**
- **Pharmacologic effects**

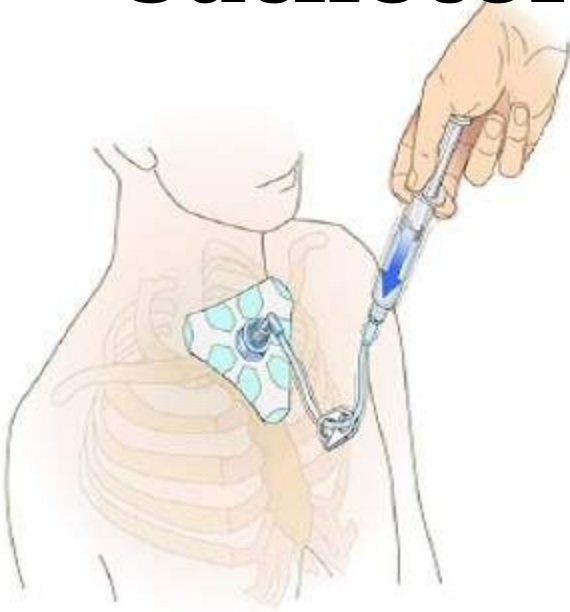


* May or may not be able to aspirate blood.



Sternal EZ-IO[®]

Flush the Catheter



- **Connect syringe to primed**

Extension Set

- **Flush with 10ml normal saline**

- **Multiple flushes may be needed**

- **NO FLUSH = NO FLOW**



Sternal EZ- IO[®]

Infuse Fluids with Pressure

- **The pressure in the medullary space is about 1/3 of the casualty's arterial pressure.**
- **Pressurizing fluids for infusion is required to achieve maximum flow rates.**





Sternal EZ-IO® Removal

- Remove the EZ-Connect Extension Set and Stabilizer.
- Attach a Luer lock syringe directly to the hub.
- Rotate the syringe clockwise while slowly and gently pulling straight back.
- Maintain axial alignment – DO NOT rock the syringe.
- Remove the Sternal Locator